No.



8,000020

THE UNIMED SHAVES OF ANTERIOR

TO ALL TO WHOM THESE PRESENTS SHALL COME; Moran Seeds, Inc.

Wilhereas, there has been presented to the

Seidenegignes and, 'yakınıydanıyqanındi

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, therefore, this certificate of plant variety protection is to grant unto the said applicant(s) and the successors, heirs or assigns of the said applicant(s) for the term of accenteen. Years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable basic red of the variety in a public repository as provided by LAW, the right to executing it, or selling the variety, or offering it for sale, or reproducing it, orting it, or exporting it, or using it in producing a hybrid or different therefrom, to the extent provided by the Plant Variety Protection Act 42, as amended, 7 u.s.c. 2321 et seq.)

MUSKMELON

'Top Net'

In Testimony Minercot, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of washington this 31st day of July in the year of our Lord one thousand nine

hundred and eighty.

Attest

Commissioner
Plant Variety Protection Office
Grain Division

Agricultural Marketing Service

UNITED STATES DEPARTME AGRICULTURAL MAR	KETING SERVICE			FORM AP	
LIVESTOCK, POULTRY, GRA	APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE				40-R3822 ction may
INSTRUCTIONS: See Reverse,			be issued unless a c has been received (5	ompleted applica U.S.C. 553).	tion form
1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAM	E	FOR OFFIC	IAL USE ONLY	
Experimental 1729	Top Net			0020	
2. KIND NAME	3. GENUS AND SPE	the state of the s	FILING DATE	TIME	A,M,
Muskmelon	<u>Cucumis</u> r	<u>nelo</u>	12-11-79 FEE RECEIVED	2:00 DATE	P.M.
4. FAMILY NAME (BOTANICAL)	5. DATE OF DETER	RMINATION	\$ 500.00	12-11-	79
Cucurbitaceae	10/5/79		\$ 250.00	6/23/	80_
6. NAME OF APPLICANT(S)	7. ADDRESS (Stree: Code)	t and No. or R.F.D. No.,	City, State, and ZIP	8. TELEPHON CODE AND	
Moran Seeds, Inc.	93901	tins Rd., Sal	linas, CA,	(408) 75	
9. IF THE NAMED APPLICANT IS NOT A PE ORGANIZATION: (Corporation, partnersh	RSON, FORM OF	10. IF INCORPORAT	ED, GIVE STATE AND	11. DATE OF	
Corporation		California		August 1	
12. NAME AND MAILING ADDRESS OF APP ALL PAPERS:	LICANT REPRESENTA	ATIVE(S), IF ANY, TO S	SERVE IN THIS APPLI	CATION AND RE	CEIVE
John H. Howell, Moran	Seeds, Inc.,	1155 Harkin	s Rd., Salir	nas, CA	93901
13. CHECK BOX BELOW FOR EACH ATTACH	MENT SUBMITTED:		r:		
X 13A. Exhibit A, Origin and Bree	eding History of the	Variety (See Section 5	2 of the Plant Variet	y Protection Ac	:t.)
X 13B. Exhibit B, Novelty Statem	ient.	·			
X 13C. Exhibit C, Objective Description	intion of the Variety	(Request form from	Dianat Warrate Proton	tion Office \	
13D. Exhibit D, Additional Des			rumi vanety Protect	ion Office.)	
14a. DOES THE APPLICANT(S) SPECIFY THA' SEED? (See Section 83(a). (If "Yes," answ.	T SEED OF THIS VAR			A CLASS OF CE	RTIFIED
14b. DOES THE APPLICANT(S) SPECIFY THA			NO B, HOW MANY GENER	ATIONS OF BEG	
LIMITED AS TO NUMBER OF GENERATI	IONS?	TION BEYOND B	REEDER SEED?		
YES NO		FOUNDATION	REGISTERED	CERTIFIE	
15a. DID THE APPLICANT(S) FILE FOR PROT name of countries and dates.)	ECTION OF THIS VAF	RIETY IN OTHER COUR	TRIES? YES	X NO (If "Y	es," give
			and the same		
		·			
15b. HAVE RIGHTS BEEN GRANTED THIS VA and dates.)	THIETY IN OTHER CO	UNTRIES? YES	X NO (If "Yes,"	give name of cou	ntries
the state of the s		•			
	* : : : : : : : : : : : : : : : : : : :	Section 1			
16. DOES THE APPLICANT(S) AGREE TO TH JOURNAL? XYES	140		•		
 The applicant(s) declare(s) that a viable replenished upon request in accordance 	sample of basic seed	of this variety will be	e furnished with the a	application and	will be
The undersigned applicant(s) is (are) the variety is distinct, uniform, and stable and the plant of the plant	e owner(s) of this se	xually reproduced nov	el plant variety and	believe(s) that t	the Section
42 of the Flant Variety Act.	· · · · · · · · · · · · · · · · · · ·				,
Applicant(s) is (are) informed that false	representation here	in can jeopardize prot	ection and result in p	enalties.	•
November 29, 1979		Mora	n Seeds, Inc		
(DATE)		. 	CONATURE OF APPLY	9/11/11/	eedes
(DATE)		by A	" wowen		TEXES
(DATE)	a Place and the	· (s	IGNATURE OF APPLI	CANT)	1

FORM GR-470 (1-78)

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

- Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties:

 (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.
- If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

EXHIBIT A

Origin and Breeding History of the Top Net Variety

- 1. Top Net is an open-pollinated Western shipping type variety resulting from the cross PMR 45 x Top Mark. Following the cross, type selection under field conditions for the fully netted characteristic of the male parent, Top Mark, was conducted for two generations. Occurrence of the rib or suture characteristic of the female parent, PMR 45, was thereby effectively reduced to 0.2% of the population in the third generation, at which time the variety became stabilized. Commercial seed production was initiated at this time.
- 2. In addition to selection for external net appearance of the fruit, selection pressure has been applied in each generation for other fruit characteristics, including:
 - 1. small stem scar (less than 18mm diameter)
 - 2. small blossom scar (less than 26mm diameter)
 - 3. slight oval-round shape
 - 4. dark orange flesh color
 - 5. high percent soluble solids (12%-16%)
 - 6. small and tight seed cavity (less than 63mm diameter)

EXHIBIT A addendum

1. Type and frequency of variants that occur during reproduction of 'Top Net'.

One variant type fruit occurs in the reproduction of 'Top Net'. It is a ribbed or sutured fruit of the 'PMR 45' type and is indistinguishable from fruits of the 'PMR 45' variety. The ribs of the variant fruit, like those of 'PMR 45' may range from bare to fully netted over depending upon the growing conditions, but in any event the variant fruit are identical to the normal ribbed fruit of the 'PMR 45' variety.

This 'PMR 45' type variant occurs in the 'Top Net' population at a frequency of 0.2 percent or less. No other variants have been observed in 'Top Net'.

2. Evidence of uniformity and stability of 'Top Net'.

A 20 acre seed production planting of 'Top Net near Arbuckle, California in 1979 was carefully monitored during the growing season for trueness to type of the fruit. At full maturity of the crop an accurate count of the ribbed or sutured fruit variant in the population was made. In two random rows 1/4 mile long, 12 plants with the ribbed or sutured variant fruit were observed. All other plants possessed the normal 'Top Net' type fruit. This calculates to 0.2 percent of the population with variant type fruit as follows:

 $\frac{12 \text{ variant plants}}{1320 \text{ ft./row x 3 plants/ft. x 2 rows}} = 0.0015 \text{ or } 0.2 \text{ percent variants.}$

In 1978 a one acre stockseed planting of 'Top Net' was made at Gilroy, California. At maturity and prior to seed harvest, the entire field was carefully checked for trueness to type of the fruit. Sixty-seven plants with ribbed or sutured fruit were observed. There were no other variant types in the population and the percentage of ribbed or sutured variants is calculated as follows:

 $\frac{200 \text{ fruit}}{3 \text{ fruit/plant}} = 67 \text{ variant plants.}$

 $\frac{13,067 \text{ ft. row/acre } (40") \times 2 \text{ plants/ft.}}{\text{variants.}} = .0026 \text{ or } 0.3 \text{ percent}$

In the 1977 trial of 'Top Net' grown at San Juan Bautista, California, three hundred plants were observed and two variants of the ribbed or sutured fruit type were found. This calculates to 0.7 percent as follows:

 $\frac{2 \text{ variant plants}}{5 \text{ rows x } 30 \text{ ft/row x } 2 \text{ plants/ft}} = 0.0066 \text{ or } 0.7 \text{ percent variants}.$

The above three years' data represent the last three consecutive generations of 'Top Net' reproduction. Only one type of variant, a ribbed or sutured fruit of the 'PMR 45' type, has been observed, and in a very small percentage of the population; e.g. from 0.7 to 0.2 percent. This indicates a high degree of uniformity in the population of the 'Top Net' variety.

It should also be noted that each successive generation of 'Top Net' reproduction has resulted in a halving of the variant expression observed in the preceding generation. The variant levels in the final two generations are at very low frequencies (0.3 and 0.2 percent, respectively), and therefore the population of 'Top Net' is for all practical purposes stabilized.

Novelty Statement

The principal distinguishing characteristics of Top Net which differentiate this variety from PMR 45 and Top Mark, the two varieties most similar to it, are its pattern of rib or suture development, powdery mildew reaction, sulfur reaction, and maturity time.

Regarding the pattern of rib or suture development, the ovaries of Top Net in the blossom stage and post-bloom stage, exhibit faint longitudinal lines (precursor of ribs or sutures), compared with the ovaries of Top Mark which have no lines. PMR 45 ovaries at blossom stage and post-bloom stage express distinct longitudinal lines (photographs 1-6). At maturity, Top Net fruit resemble those of Top Mark in that neither have ribs or sutures. Mature fruit of PMR 45 possess distinct ribs or sutures - from smooth to fully netted over (photographs 7-9).

These and other selected characteristics of Top Net as compared with the two most similar varieties, PMR 45 and Top Mark, are tabulated as follows:

Characteristic	Top Net	PMR 45	Top Mark
1 D.1	•		_
1. Ribs or sutures, mature fruit	absent	present	absent
2. Ovary longitudinal lines, blossom stage and post-bloom stage	faint	distinct	absent
3. Powdery mildew reaction (Spherotheca fuliginea race 1)	tolerant	resistant	susceptible
4. Sulfur reaction (SR)	tolerant	susceptible	resistant
5. Average maturity, days	78	74	82
6. Vine size	medium	medium	large
7. Fruit shape, cross section	round	round	round to triangu-
8. Soluble solids, percent	10-16	8-13	10-16
			(A)

MUSKMELON APPLICATION NO. 800020, 'TOP NET'

EXHIBIT B addendum

Yield data from three cantaloupe (muskmelon) variety trials expressed by date of pick or time of harvest and showing that 'Top Net' is earlier in maturity than 'Top Mark' and later in maturity than 'PMR 45'.

Five Points, California

Yields of cantaloupe varieties evaluated at the West Side Field Station in 1979. All yield values are wood crate equiavlents per acre and each value represents an average of 5 replications.

Cumulative	Yield	of M	larketable	Fruit
crate e	equival	ents	per acre	

	1	2	3	4	5	6
<u>Variety</u>	Pick	Picks	Picks	<u>Picks</u>	<u>Picks</u>	Picks
'PMR 45'	52	169	329	428	471	488
'Top Mark'	3	55	204	404	574	633
'Top Net'	28	134	267	419	517	539
LSD 5% Level	29	49	81	86	72	69

Imperial Valley, California²

Marketable Crates Per Acre

<u>Variety</u>	9/14 to 9/21	9/24 to 9/28	<u>Total</u>
'Top Mark'	37	151	188
'PMR 45'	121	30	151
'Top Net'	68	121	189

Fruits with sunburn, poor net, serious cracks, rots (all kinds) or overripes were excluded. Yields classified by size for crate determination.

The 50 foot plots had 5 replications. They were planted July 5, 1979 and furrow irrigated to emergence. The thinned spacing in-row was 12 inches. There were seven harvests on (September 14, 17, 19, 21, 24, 26, 29). Only full slip mature fruit were taken.

Yuma, Arizona³

Number and size of fruit versus date of pick

		'Kin <u>('To</u>	g Henry p Mark'	' -type)		op Net	t	' P!	1R 45'	
Date		<u>27</u>	<u>36</u>	<u>45</u>	<u>27</u>	<u>36</u>	<u>45</u>	<u>27</u>	<u>36</u>	<u>45</u>
6/15		0	2	0	0	6	1	0	22	3
16		1	0	0	2	7	1	5	14	2
17		2	10	- 13	0	30	20	15	52	17
18	,	0	14	. 3	2	39	7	6	32	2
19		4	20	0	0	29	.5	3	26	0
20	*	- 7	34	3	0	28	5	4	36	. 4
•		•	•	•	•	•	•	•	•	•
•		. •	.•	•	•	•	. •	•	•	•
. 7/1			•	<u>:</u>	•	•	•	:	•	•
7/4				_5	_3	_0	_0	_0	_0	_2
Total		47	279	194	47	328	152	54	341	172

Four replications, each replication 85 ft. Planted February 21, 1979. Seeds were planted to a stand of one plant per 12". Totals do not include any culling other than sunburns and growth cracks discovered at picking.

Generally the variety 'PMR 45' matures one week to 10 days earlier than 'Top Mark'. 'Top Net', being derived from a cross of these two varieties, has a maturity intermediate between 'PMR 45' and 'Top Mark'.

Note that in the Yuma, Arizona trial the variety 'King Henry' serves as a 'Top Mark'-type entry. 'Top Mark' and 'King Henry' are very similar in all respects, and are virtually indistinguishable from one another in variety trials.

^{1. 1979} Melon Variety Evaluations K.B. Taylor Cooperative Extension Parlier, California

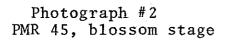
^{2.} Imperial County Fall Cantaloupe Variety Trial - IVFS Keith S. Mayberry Farm Advisor Imperial County Courthouse El Centro, California

 ¹⁹⁷⁹ University of Arizona Valley Experimental Farm Melon Variety Trial Terry H. Mikel Extension Agent, Agriculture 1047 Fourth Avenue Yuma, Arizona 85364

8000020

Photograph #1
Top Net, blossom stage

Note faint ovary longitudinal lines.



Note distinct ovary longitudinal lines.

Photograph #3
Top Mark, blossom stage

Note absence of ovary longitudinal lines.







8000020

Photograph #4
Top Net, post-bloom

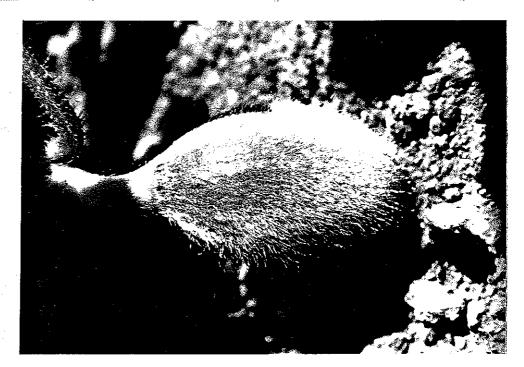
Note faint ovary longitudinal lines.

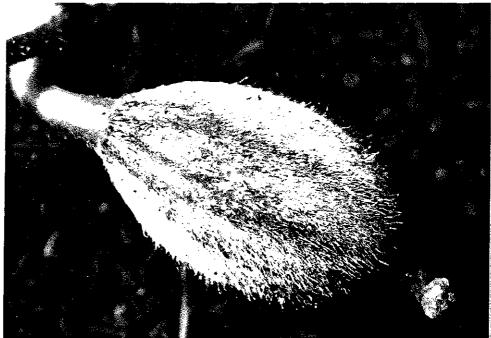
Photograph #5 PMR 45, post-bloom

Note distinct ovary longitudinal lines.

Photograph #6 Top Mark, post-bloom

Note absence of ovary longitudinal lines.





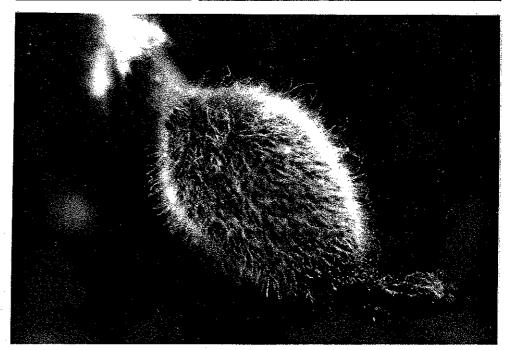
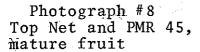


EXHIBIT B

8000020

Photograph #7
Top Net, mature fruit

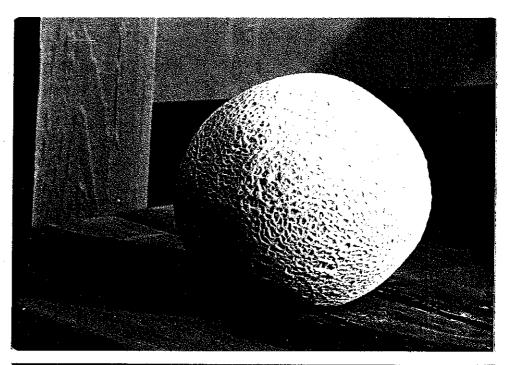
Note fully netted appearance - no ribs or sutures.

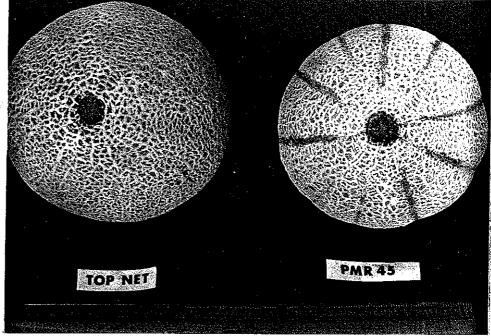


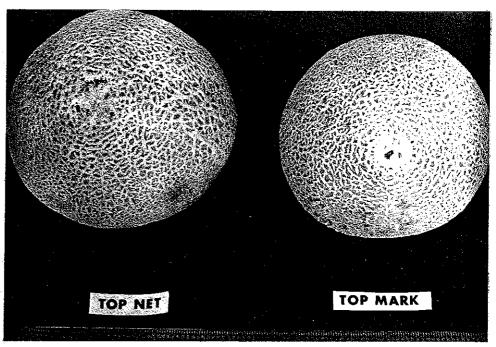
Note fully netted appearance of Top Net compared with distinct ribs or sutures of PMR 45.

Photograph #9
Top Net and Top Mark,
mature fruit

Note fully netted appearance of both varieties.







PAGE 1 OF 3

FORM GR-470-38 (6-76)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
BELTSVILLE, MARYLAND 20705
OBJECTIVE DESCRIPTION OF VARIETY

Muskmelon (Cucumis melo L.)

muskindor (oddamis mer	
NAME OF APPLICANT(S)	VARIETY NAME OR TEMPORARY DESIGNATION
Moran Seeds, Inc.	Top Net
ADDRESS (Street and No., or R. F.D. No., City, State, and ZIP Code)	FOR OFFICIAL USE ONLY
1155 Harkins Rd. Salinas, CA 93901	8000020
Place the appropriate number that describes the varietal character of this variety in the boxes believed a zero in first box (e.g. 089 or 09) when number is either 99 or less.	ow.
1. TYPE:	
1 = PERSIAN 2 = HONEY DEW 3 = CASABA 4 = CRENSHAW 6 = OTHER	5 = COMMON OR SUMMER
2. AREA OF BEST ADAPTATION IN U.S.A.	
1 = SOUTHEAST 2 = NORTHEAST/NORTHCENTRAL 3 = SOUTHWEST	4 = MOST AREAS
3. MATURITY (FROM SEEDING TO HARVEST):	•
0 7 8 DAYS	
0 4 NO. DAYS EARLIER THAN	(MIDSEASON)
0 4 NO. DAYS LATER THAN	(4a) Top Mark; (4b) PMR 45
<u></u>	
4. PLANT:	
1 = ANDROMONOECIOUS 2 = MONOECIOUS 3 = GYNOECIOUS	4 = OTHER
1 = VINE 2 = SEMI-BUSH 3 = BUSH	
5. LEAF (MATURE BLADE OF THIRD LEAF)	
SHAPE: 1 = ORBICULAR 2 = OVATE 3 = RENIFORM	and the second of the second o
1 = NOT LOBED 2 = SHALLOWLY LOBED 3 = DEEPLY LOBED	
1 = LIGHT GREEN (HONEY DEW) 2 = MEDIUM GREEN 3 = DK, GREEN (RIO GOLD)
1 3 0 mm LENGTH 1 3 0 mm WID	тн
3 SURFACE: 1 = PUBESCENT 2 = GLABROUS 3 = SCABROUS	en e
6. FRUIT (AT EDIBLE MATURITY):	
1 5 cm LENGTH 1 4 cm DIAMETER	1 1 9 2 gm WEIGHT
SHAPE: 1 = OBLATE 2 = OVAL 3 = ROUND 4 = ELONGATE-CYL	INDRICAL 5 = SPINDLE 6 = ACORN
2 SURFACE: 1 = SMOOTH 2 = NETTED 3 = CORRUGATED 4 = WA	RTED
2 BLOSSOM SCAR: 1 = OBSCURE 2 = CONSPICOUS	
RIBS: 1 = ABSENT 2 = PRESENT	ning.
0 0 NO. RIBS PER FRUIT 0 0 0 mm RIB WIDTH AT MEDIAL	RIBS: $1 = SMOOTH 2 = NETTED$
SUTURES:	
1 = SHALLOW (GOLDEN DELIGHT) 2 = MEDIUM 3 = DEEP (HACKENSAG	ck)
0 1 = SMOOTH 2 = NETTED	
3 SHIPPING QUALITY: 1 = POOR (HOME GARDEN) 2 = FAIR (SHORT DISTANCE SHIPPING)	CE SHIPPING)
	eth. eth.

3 = DO NOT ABSCISS

FRUIT ABSCISE: 1 = WHEN RIPE 2 = WHEN OVERRIPE

FORM GR-470-38	
7. RIND NET:	PAGE 2 OF
3 1 = ABSENT 2 = SPARSE 3 = ABUNDANT	11 V - 1 15 - 1
DISTRIBUTION: 1 = SPOTTY 2 = COVERS ENTIRE FRUIT	
2 COARSENESS: 1 = FINE 2 = MEDIUM COARSE 3 = VERY COARSE	
	• .
3 INTERLACING: 1 = NONE 2 = SOME 3 = COMPLETE 2 INTERSTICES: 1 = SHALLOW 2 = MEDIUM DEEP 3 = DEEP	
	
8. RIND TEXTURE:	
3 1 = SOFT 2 = FIRM 3 = HARD 1 0 mm THICKNESS AT MEDIAL	
9, RIND COLOR (AT EDIBLE MATURITY):	
COLORS: (SELECT TWO WHEN NECESSARY, i.e., CREAMY YELLOW 0 2 0 4) 01 = WHITE 02 = CREAM 03 = BUFF 04 = YELLOW 05 = GOLD 06 = GREEN 07 = ORANGE	
01 = WHITE 02 = CREAM 03 = BUFF 04 = YELLOW 05 = GOLD 06 = GREEN 07 = ORANGE 09 = BROWN 10 = GRAY 11 = BLACK 12 = OTHER (Specify) NOTE	08 = BRONZ
0 4 0 7 PRIMARY COLOR 0 0 1 2 MOTTLING COLOR	
0 0 0 3 NET COLOR 0 0 1 2 FURROW (SUTURE) COLOR	
1010 H 12	
RIND COLOR (AT FULL MATURITY)	
0 5 0 7 PRIMARY COLOR 0 0 1 2 MOTTLING COLOR	
0 0 0 1 2 FURROW (SUTURE) COLOR	
1 = WHITE 2 = CREAM 3 = YELLOW 4 = GREEN 5 = ORANGE 6 = SALMON 7 = PINK 8 = OTHER (Specify). 0 5 COLOR NEAR CAVITY 0 5 COLOR IN CENTER 1 3 REFRACTOMETER % SOLUABLE SOLIDS (CENTER OF FLESH) 7 FMR 45 1 0 % SOLUABLE SOLIDS FOR CHECK VARIETY (Specify variety)	D
2 AROMA: 1 = ABSENT 2 = FAINT 3 = STRONG	
2 FLAVOR: 1 = MILD 2 = SOMEWHAT SPICY 3 = VERY SPICY	
	<u> </u>
1. SEED CAVITY:	
9 0 mm LENGTH 5 7 mm WIDTH	
SHAPE IN X-SECTION: 1 = CIRCULAR 2 = TRIANGULAR	
2. SEEDS:	
4 8 0 NO. PER FRUIT 0 2 4 gm PER 1,000	in the teacher was
3. DISEASE RESISTANCE * (0 = UNTESTED, 1 = SUSCEPTIBLE, 2 = RESISTANT)	in maka masahir mesahiri. Ta
0 BACTERIAL WILT 0 ROOT ROT 0 CROWN BLIGHT 0 MELON RUST	and the second
2 POWDERY MILDEW 0 VERTICILLUM WILT 2 SULPHUR BURN 0 SCAB	er 1990 – Harriston Holling (1991) and the second second second second second second second second second second 1991 – Harriston States (1991) and the second
0 WATERMELON MOSAIC 0 DOWNY MILDEW 0 FUSARIUM WILT 0 ROOT KNOT (NEMA	TODE)
0 ANTHRACNOSE 0 CUCUMBER MOSAIC 0 SQUASH MOSAIC 0 OTHER	
0 OTHER	
O OTHER	

^{*} STATE GENUS, SPECIES, AND RACES WHEN KNOW, UNDER ITEM 16.

EXHIBIT D

Additional Description of the Top Net Variety

Top Net is a mid-season, 78 day, Western shipping type musk-melon in the PMR 45 - Top Mark class.

The fruit are fully netted like Top Mark (no ribs or sutures), and are a slight oval-round shape of the predominantly "36 size" ($5\frac{1}{2}$ " dia. x 6" long). The flesh is crisp, orange, sweet (10%-16% soluble solids¹), of excellent flavor and aroma, and averages $1\frac{1}{2}$ " in thickness. The flesh maintains better crispness through full slip maturity than either Top Mark or PMR 45, resulting in more durable fruit with improved shipping capability.

The seed cavity is normally small and tight (less than 2½" dia.), with three locules and 160 seeds per locule. Rind thickness is 3/8 inch.

The leaves, vine, flowering habit and pattern of fruit set of Top Net are similar to those of PMR 45. Unlike PMR 45, however, Top Net is tolerant to sulfur, although not resistant as is Top Mark. Top Net is also intermediate in powdery mildew tolerance (Spherotheca fuliginea race 1) between PMR 45 (resistant) and Top Mark (susceptible).

Variety trials over two years have demonstrated good adaptability of Top Net in four major Southwestern cantaloupe-growing areas, including Yuma, Arizona, and the Imperial Valley, Bakersfield and West Side area of the San Joaquin Valley in California.

¹Bausch & Lomb Hand Refractometer (0-60%)

ASSIGNMENT

WHEREAS, Moran Seeds, Inc. ("Moran"), a corporation duly organized and existing under the laws of the State of Delaware is the owner of United States Plant Variety Protection Certificates (the "Certificates"), listed in Exhibit A hereto and Pending United States Plant Variety Protection Applications (the "Applications"), listed in Exhibit B hereto; and

WHEREAS, in accordance with a Technology Transfer Agreement (the "Transfer Agreement") among Celanese Corporation ("Celanese"), Moran Seeds, Inc., Joseph Harris Company, Inc., CelPril Industries, Inc., Harris Moran International B.V. ("Sellers"), Virginia Chemicals, Inc., Les Produits Organiques du Santerre-Orsan S.A. ("Orsan"), HMS Acquisition Inc., CP Acquisition Inc., and Exploitatiemaatschappij Wolwevershaven B.V., dated January, 1985, and a Purchase Agreement dated December 7, 1985, as amended, among Celanese, Sellers and Orsan, Orsan has purchased from Moran said Certificates and Applications.

NOW, THEREFORE, in accordance with said Transfer Agreement and Purchase Agreement, Moran assigns to Orsan all of its rights, title and interest in and to said Certificates and Applications.

Moran hereby authorizes Orsan to apply for and obtain the recordation of this Assignment. Moran agrees that it shall, without further consideration, promptly and duly cause to be performed such lawful acts and execution of any other documents as Orsan may reasonably request in order for Orsan to obtain the full benefits of this Assignment and to permit Orsan to be duly recorded in each office, bureau and tribunal in the appropriate jurisdiction as the registered owner or proprietor of each of the rights hereby assigned. Such instruments and documents shall include, without limitation, such applications, affidavits and other documents for filing in such jurisdictions as Orsan may from time to time reasonably request.

By these presents Orsan does hereby accept this Assignment and authorize the recording thereof with the appropriate authorities aforesaid.

IN WITNESS WHEREOF, the parties have caused this Assignment to be executed by its proper officers thereunto duly authorized this the day of January, 1985.

MORAN SEEDS, INC., Assignor

David A. Jenkins
Vice President

LES PRODUITS ORGANIQUES DU SANTERRE-ORSAN S.A. Assignee

itle: Altoney in fact

STATE OF New York

of January, 1985

Sworn before me at New York this 10th day

Clay C. Lengyel

NOTARY PUBLIC

(Notary Public)

My Commission Expires:

ALEX C. LENGYEL
Notary Public State of New York
The State of New York
Qualification bear fork County
Commission Expires March 20, 135 6

STATE OF New York

Before me, a Notary Public, in and for said County, personally appeared fature lateral who acknowledged that he is the fature of Les Produits Organiques du Santerre-Orsan S.A., the corporation which executed the foregoing instrument and who acknowledged he signed said instrument on behalf of said corporation by authority of its Board of Directors; and that said instrument is the free corporate act and deed of said Les Produits Organiques du Santerre-Orsan S.A.

day of January, 1985.

this 10th

NOTARY PUBLIC

(Notary Public)

My Commission Expires:

ALEX C. LENGYD.

Notary Public, State of New York

No. 31 48,000 g.

Qualified in New York County

Generalson Expired Major 90, 198 6

United States Plant Variety Protection Certificates

Cert. No.	Date <u>Issued</u>	<u>Kind</u>	Variety Name	<u>Owner</u>
7200145	10/30/74	Garden Bean	Gem	Moran Seeds, Inc.
7200146	11/15/74	Watermelon	Charleston 76	Moran Seeds, Inc.
7400013	5/9/74	Lettuce	Calmaria	Moran Seeds, Inc.
7400014	6/19/74	Lettuce	Cal K-60	Moran Seeds, Inc.
7400071	6/19/74	Lettuce	Cabrillo	Moran Seeds, Inc.
7600032	9/15/77	Lettuce	Vanagara	Moran Seeds, Inc.
7600039	12/8/77	Lettuce	Morangold	Moran Seeds, Inc.
7800028	5/31/79	Muskmelon	Valley Gold	Moran Seeds, Inc.
7900038	1/14/82	Garden Bean	Blue Duet	Moran Seeds, Inc.
7900039	7/15/82	Snapbean	Score	Moran Seeds, Inc.
7900066	11/27/79	Cauliflower	Snowball 123	Moran Seeds, Inc.
8000020	7/31/80	Muskmelon (Top Net	Moran Seeds, Inc.
8000082	12/10/81	Lettuce	Delmar	Moran Seeds, Inc.
8200019	10/28/82	Onion	OMO M	Moran Seeds, Inc. Oshita, Inc.
8200061	3/24/83	Watermelon	Sun Gold	Moran Seeds, Inc.
8200104	10/28/82	Tomato	Advantage	Moran Seeds, Inc.
8200105	11/26/82	Tomato	Moran 3053	Moran Seeds, Inc.
8200027	4/23/83	Lettuce	El Toro	Moran Seeds, Inc.
8100172	9/29/83	Lettuce	Van Mor	Moran Seeds, Inc.
8300113	8/31/84	Muskmelon	Top Net SR	Moran Seeds, Inc.

Pending United States Plant Variety Protection Applications

Application No.	Filing Date	<u>Kind</u>	Variety Name	<u>Owner</u>
8100167	9/9/81	Lettuce	Yuma	Moran Seeds, Inc.
8300155	7/18/83	Celery	Bishop	Moran Seeds, Inc.
8300156	7/18/83	Celery	Deacon	Moran Seeds, Inc.
8300172	9/1/83	Tomato	Diego	Moran Seeds, Inc.
8400013	12/1/83	Lettuce	Greenfield	Moran Seeds, Inc.

MA

DEED OF ASSIGNMENT

WHEREAS, Les Produits Organiques du Santerre – ORSAN (S.A.), a French corporation having a place of business at 16 rue Ballus, 75009 Paris, France (hereinafter referred to as "ASSIGNOR") owns and is using the Plant Variety Protection Certificates listed on the attached Exhibit for the indicated varieties which were awarded to ASSIGNOR by the Secretary of Agriculture on the indicated dates upon applications filed with the United States Plant Variety Protection Office; and

WHEREAS, Arisix (S.A.), a French corporation having a place of business at 61 rue des Belles Feuilles, 75116 Paris, France,

(hereinafter referred to as "ASSIGNEE") is desirous of acquiring the entire right, title and interest in and to the said varieties and Plant Variety Protection Certificates;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that, for good and valuable consideration, receipt of which is hereby acknowledged, ASSIGNOR has sold, assigned and transferred, and by these presents does sell, assign and transfer unto said ASSIGNEE, and ASSIGNEE'S successors and assigns, all right, title and interest in and to the said varieties and said Plant Variety Protection Certificates in the United States including reissues, and including the right to enforce such rights against any past, present or future violation thereof, the said interest to be held and enjoyed by said ASSIGNEE as fully and exclusively as it would have been and enjoyed by said ASSIGNOR had this assignment and transfer not been made, to the full end and term of any right, title and interest assigned and transferred hereby.

ASSIGNOR further agrees that it will, without charge to said ASSIGNEE, but at ASSIGNEE's expense, cooperate with ASSIGNEE in the assignment of said Certificates and the perfection of all rights thereto, execute, verify, acknowledge and deliver all such further papers and instruments of assignment and transfer

thereof, and will perform such other acts as ASSIGNEE lawfully may request, to obtain or maintain the listed Certificates and to vest title thereto in said ASSIGNEE or ASSIGNEE's successors and assigns.

IN TESTIMONY WHEREOF, an authorized representative of ASSIGNOR has hereunto signed its name to this assignment on the date indicated below.

	Les Produits Organiques du Santerre – ORSAN (S.A.)
Date: //11/95	Milliez
	PHILIPPE ROLLIER
	Print Name
	PRESIDENT
	Print Title
personally appeared the above-na	, 1993, before me, the undersigned notary public, med assignor, known to me (or proved to me on to be the person whose name is subscribed to the dged that he executed the same.
	(Notaire)
Seal/Stamp	Vil All Centification materialle Se signature figurent Rolle 6 E Fait à Baris; le : AL 199 Hotaires

DEED OF ASSIGNMENT

WHEREAS, Arisix (S.A.), a French corporation having a place of business at 61 rue des Belles Feuilles, 75116 Paris, France (hereinafter referred to as "ASSIGNOR") owns and is using the Plant Variety Protection Certificates listed on the attached Exhibit for the indicated varieties which were awarded to ASSIGNOR by the Secretary of Agriculture on the indicated dates upon applications filed with the United States Plant Variety Protection Office; and

WHEREAS, Clause (S.A.), a French corporation having a place of business at 1 Avenue Lucien Clause, 91221 Bretigny sur ORGE Cedex, France,

(hereinafter referred to as "ASSIGNEE") is desirous of acquiring the entire right, title and interest in and to the said varieties and Plant Variety Protection Certificates;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that, for good and valuable consideration, receipt of which is hereby acknowledged, ASSIGNOR has sold, assigned and transferred, and by these presents does sell, assign and transfer unto said ASSIGNEE, and ASSIGNEE'S successors and assigns, all right, title and interest in and to the said varieties and said Plant Variety Protection Certificates in the United States including reissues, and including the right to enforce such rights against any past, present or future violation thereof, the said interest to be held and enjoyed by said ASSIGNEE as fully and exclusively as it would have been and enjoyed by said ASSIGNOR had this assignment and transfer not been made, to the full end and term of any right, title and interest assigned and transferred hereby.

ASSIGNOR further agrees that it will, without charge to said ASSIGNEE, but at ASSIGNEE's expense, cooperate with ASSIGNEE in the assignment of said Certificates and the perfection of all rights thereto, execute, verify, acknowledge and deliver all such further papers and instruments of assignment and transfer

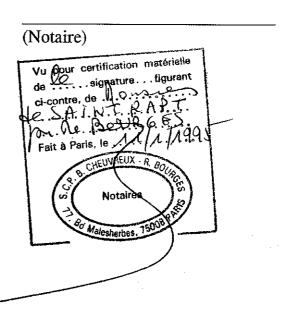
thereof, and will perform such other acts as ASSIGNEE lawfully may request, to obtain or maintain the listed Certificates and to vest title thereto in said ASSIGNEE or ASSIGNEE's successors and assigns.

IN TESTIMONY WHEREOF, an authorized representative of ASSIGNOR has hereunto signed its name to this assignment on the date indicated below.

	Arisix (S.A.)
Date: 1/11/95	Mart Den 13.
	DO SAINT RAPT
:	Print Name
	PRESIDENT.
	Print Title
On this date.	. 1993, before me, the undersigned notary public
On uns date.	. 1773. DEIDIE DIE DIE HINGEFSTYREG HOTATY DITDIE

on this date, ______, 1993, before me, the undersigned notary public, personally appeared the above-named assignor, known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.

Seal/Stamp



EXHIBIT

Certif. #	Date Status Begins	Crop	Variety Name
7600032	09/15/77	L-ettuce	Vanagara -
760003 9	-12/08/77	Lettuce	Morangold
- 76050 18	09/28/77	Marigold	Cabaret Orange
7800028	05/31/79	Muskmelon	Valley Gold
7800033	12/21/78	Radish	Fancy Red
7800086	01/25/79	Lettuce	Deep Red
7900038	01/14/82	Garden Bean	Blue Duet
7900039	07/15/82	Garden Bean	Score
7900066	11/27/79	Cauliflower	Snowball 123
8000020	07/31/80	Muskmelon	Top Net
8000082	12/10/81	Lettuce	Delmar
8100167	3/29/85	Lettuce	Yuma
8100172	09/29/83	Lettuce	Van Mor
8200027	04/23/83	Lettuce	El Toro
8200045	09/23/82	Turnip	Royal Gem
8200061	03/24/83	Watermelon	Sun Gold
8200068	12/30/82	Egg Plant	Little Fingers
8200104	10/28/82	Tomato	Advantage
8200105	11/26/82	Tomato	Moran 3053
8300024	12/30/83	Radish	Red King
8300113	08/31/84	Muskmelon	Top Net SR
8300155	02/22/85	Celery	Bishop
8300156	01/25/85	Celery	Deacon
8300172	11/29/85	Tomato	Harris Morgan 3075
8400013	2/19/88	Lettuce	Greenfield
8600032	03/11/88	Tomato	Murrieta II

Expired Expired Expired

PLANT VARIETY PROTECTION REGISTRATION ASSIGNMENTS

Clause, S.A. to Harris Moran Seed Company

WHEREAS, Clause, S.A. ("Assignor"), a corporation organized and existing under the laws of France, has sold and transferred assets, including plant variety protection registrations, to Harris Moran Seed Company ("Assignee"), a corporation organized and existing under the laws of the State of Maryland;

WHEREAS, Assignor, is the owner of the following plant variety protection registrations:

VARIETY NAME	Registration No.	<u>Issue Date</u>
BLUE DUET	7900038	01/14/82
SCORE	7900039	07/15/82
TOP NET SR •	8300113	08/31/84
TOP NET	8000020	07/31/80
SNOWBALL 123	7900066	11/27/79
BISHOP	8300.155	02/22/85
DEACON	8300156	01/25/85
LITTLE FINGERS	8200068	12/30/82
EL TORO MI	8200027	04/28/83
DELMAR MI	8000082	12/10/81
GREENFIELD MI	8400013	02/19/88
VAN MOR MI	8100172	03/29/83
YUMA MI	8100167	03/29/85

RED KING	8300024	12/30/83
MORAN 3053	8200105	11/26/82
ADVANTAGE	8200104	10/28/82
HARRIS MORAN 3075	8300172	11/29/85
ROYAL GEM	8200045	09/23/82
SUN GOLD	8200061	03/24/83

WHEREAS, Assignor is desirous of selling and Assignee is desirous of acquiring the aforesaid plant variety protection registrations of Assignor.

NOW THEREFORE, for \$10.00 and other good and valuable consideration, the receipt of which is hereby acknowledged, Assignor, by these presents sells, assigns and transfers to Assignee, its successors and assigns, all right title and interest in and to the above-referenced plant variety protection registrations, to be held and enjoyed by said Assignee, as fully as the same would have been enjoyed by said Assignor, had this assignment not been made.

Assignor also assigns and transfers to Assignee, any and all causes of action, claims, demands, or other rights occasioned from or because of any and all past infringement of any of the above referenced plant variety protection registrations.

Assignor further agrees that upon request, it will execute any and all documents necessary to vest all rights, title and interest in and to the above-referenced plant variety protection registrations

IN WITNESS WHEREOF, said Assignor, has affixed its signature hereto this 22 day of

January, 1997.

CLAUSE, S.A.

By:_

Name! Jultw W. fow

Title:

2/14/0/ Unto

ASSIGNMENT OF INTELLECTUAL PROPERTY

WHEREAS, HARRIS MORAN SEED COMPANY, a corporation duly organized and

existing under the laws of the State of Maryland, having its principal place of business at 4511

Willow Road, Suite 3, Pleasanton, California 94588 ("Assignor"), has, pursuant to that certain

Bill of Sale and Assignment dated as of June 30, 1997, transferred to FERRY-MORSE SEED

COMPANY (CALIFORNIA), a corporation duly organized and existing under the laws of the

State of California, having its principal place of business at 555 Codoni Avenue, P.O. Box 4938,

Modesto, California 95352-4938 ("Assignee"), all of the intellectual property Assignor had

adopted, used and was using as of the effective date of this Assignment, including without

limitation, the intellectual property represented by the United States Plant Variety Protection

Certificates of Assignor identified on Schedule A hereto (collectively, the "Property"); and

WHEREAS, on the date hereof, Assignee has changed its name to "Harris Moran Seed

Company";

NOW, THEREFORE, effective by this instrument as of the close of business on

June 30, 1997, and for good and valuable consideration, receipt of which is hereby

acknowledged, Assignor hereby assigns to Assignee any and all right, title and interest

worldwide in and to the Property and any and all recordations thereof, including, but not limited

to, the use of the Property in any manner, all benefit of any and all prior use of the Property, and

any and all rights to initiate claims or proceedings for past, present or future infringements of

Assignor's rights, title and interest in and to the Property.

Dated: as of June 30, 1997

HARRIS MORAN SEED COMPANY

NEWY01A:171511:1:09/26/97

UTOUDIO

CERTIFICATE OF AMENDMENT

OF THE

ARTICLES OF INCORPORATION

OF

ENDORSED FILED

In the office of the Secretary of State of the State of California

JUN 3 0 1997

FERRY-MORSE SEED COMPANY (CALIFORNIA)
(a California corporation)

To the Secretary of State State of California

Pursuant to the provisions of the General Corporation Law of the State of California, the undersigned officers of FERRY-MORSE SEED COMPANY (CALIFORNIA), a California corporation (the "Corporation"), do hereby certify as follows:

- The name of the Corporation is Ferry-Morse Seed Company (California).
- 2. Article One of the Corporation's Articles of Incorporation, which relates to the name of the Corporation, is hereby amended in its entirety to read as follows:

One. The name of this Corporation is:
HARRIS MORAN SEED COMPANY.

- 3. The amendment herein provided for has been approved by the Corporation's Board of Directors.
- 4. The amendment herein provided for was approved by the written consent of the Corporation's sole shareholder in accordance with the provisions of Section 902 of the California General Corporation Law. The total number of outstanding shares of the corporation is 5,000.

IN WITNESS WHEREOF, each of the undersigned does hereby declare under the penalty of perjury that he or she signed the foregoing Certificate of Amendment as of June 30,

1997, in the Town of Modesto, State of California, in the official capacity set forth beneath his or her signature and that the statements set forth in this certificate are true of his or her own knowledge.

Yves Queste, President

Helen Andritsakis, Secretary



SECRETARY OF STATE



I, BILL JONES, Secretary of State of the State of California, hereby certify:

That the attached transcript has been compared with the record on file in this office, of which it purports to be a copy, and that it is full, true and correct.

> IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this

> > JUN 3 0 1937



Bill mes

Secretary of State

-							IAGES
14	, INSECT RESISTANCE:	(0 = UNT	ESTED, 1 = SUSCEPTIBLE,	2 = R	RESISTANT)		
) APHID	0	PICKLE WORM	0	DARKLING GROUND-BEETLE	0	BANDED CUCUMBER BEETLE
	MITE	0	WESTERN SPOTTED CUCUMBER BEETLE	0	MELON LEAFHOPPER	0	OTHER (Specify)
	MELON WORM	0	WESTERN STRIPED	0	MELON LEAFMINER		

CHARACTER	VARIETY	CHARACTER	VARIETY
DAYS MATURITY	Top Mark	FRUIT SHAPE	PMR 45
PLANT VIGOR	PMR 45	RIND COLOR	PMR 45
PLANT HABIT	PMR 45	FLESH AROMA	Top Mark
FRUIT NETTING	Top Mark	FLESH FLAVOR	Top Mark
FRUIT SIZE	PMR 45	FLESH COLOR	Top Mark

16. ADDITIONAL INFORMATION AND COMMENTS:

Shipmaster is a newly-introduced variety which resembles Top Net. However, Shipmaster segregates approximately 50:50 for ribbed or sutured fruit and fully netted fruit. Top Net fruit are all fully netted without any ribs or sutures, except that approximately 0.2% of the population as described in Exhibit A may express ribs or sutures.